

# The Life-Cycle Management Approach— Team C4ISR Delivers New Equipment and the Joint Network Node to the 3rd Infantry Division

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**R**evolutions are not made,  
they come. ... It [revolution]  
comes out of the  
past. Its foundations are laid  
far back."

— Wendell Phillips, 1852

SSG Clayborne Taylor, network switching systems operator for 3ID's Detachment 2, 3rd Signal Co., powers up switching equipment inside the JNN at Fort Stewart, GA. (U.S. Army photo by Timothy L. Rider.)

Revolutions might be thought of as noisy affairs — clashes of arms or ideals — but on Oct. 1, 2004, a doorway to revolution was quietly opened at Fort Stewart, GA. To the casual observer, it was just another day, otherwise noteworthy only as the new fiscal year's first day. It all happened when a deadline was met, unnoticed by many, to replace the 3rd Infantry Division's (3ID's) combat communication shelters with new Humvee-borne shelters, wheelborne satellite dishes and Soldiers trained to use them. One would be hard-pressed to believe that the new camouflage-painted gear had anything to do with revolution, but a closer look reveals much more. Those satellite dishes signal both space and change — change that impacts how Army units collaborate within Joint and coalition realms and how the Army collaborates to provide new capabilities using a life-cycle management perspective.

### Untethering the 'Rock of the Marne'

Oct. 1 was the deadline for equipment to be in place for the 3ID to prepare for a Mission Readiness Exercise, having wholly reorganized as the Army's first "modular" division. The 3ID went into *Operation Iraqi Freedom* (OIF) in 2003 with seven brigades — three for maneuver and four separate brigades for aviation, engineering, artillery and support. By October 2004, much had changed. The 3ID now has four maneuver brigade combat teams (BCTs) and an aviation brigade but no artillery or engineering brigades. Each BCT has internal engineering, artillery and support battalions and companies to provide military intelligence and signal support. All BCTs under the new 3ID formation can fight and train as holistic units under a single commander, and each can operate autonomously.



The new Humvee-borne communications shelter, will enhance Soldier communications and mobility for maneuver-based organizations such as 3ID's BCTs. (U.S. Army photo by Steve Smith.)

To enable the BCTs to operate autonomously while continuing to maintain their lines of communications, each received new communications shelters that provide network transport connectivity via satellite — and for good reason based upon recent history. During *OIF*, 3ID division and brigade command posts occasionally lost connectivity during the rapid, 150-plus kilometer push north to Baghdad because their communications systems were designed to operate in a linear manner, tethered to terrestrial lines of communication. The tactical network provider that the 3ID relied on was based on Mobile Subscriber Equipment (MSE). MSE was breakthrough gear when fielding began in 1988, and it proved successful when it deployed for *Operation Desert Shield*/

*Desert Storm* in 1990 because of its extended range and increased throughput using line-of-sight radio links. Considering that 1990 was, according to Internet historian Robert H. Zakon, 2 years before the phrase, "surfing the

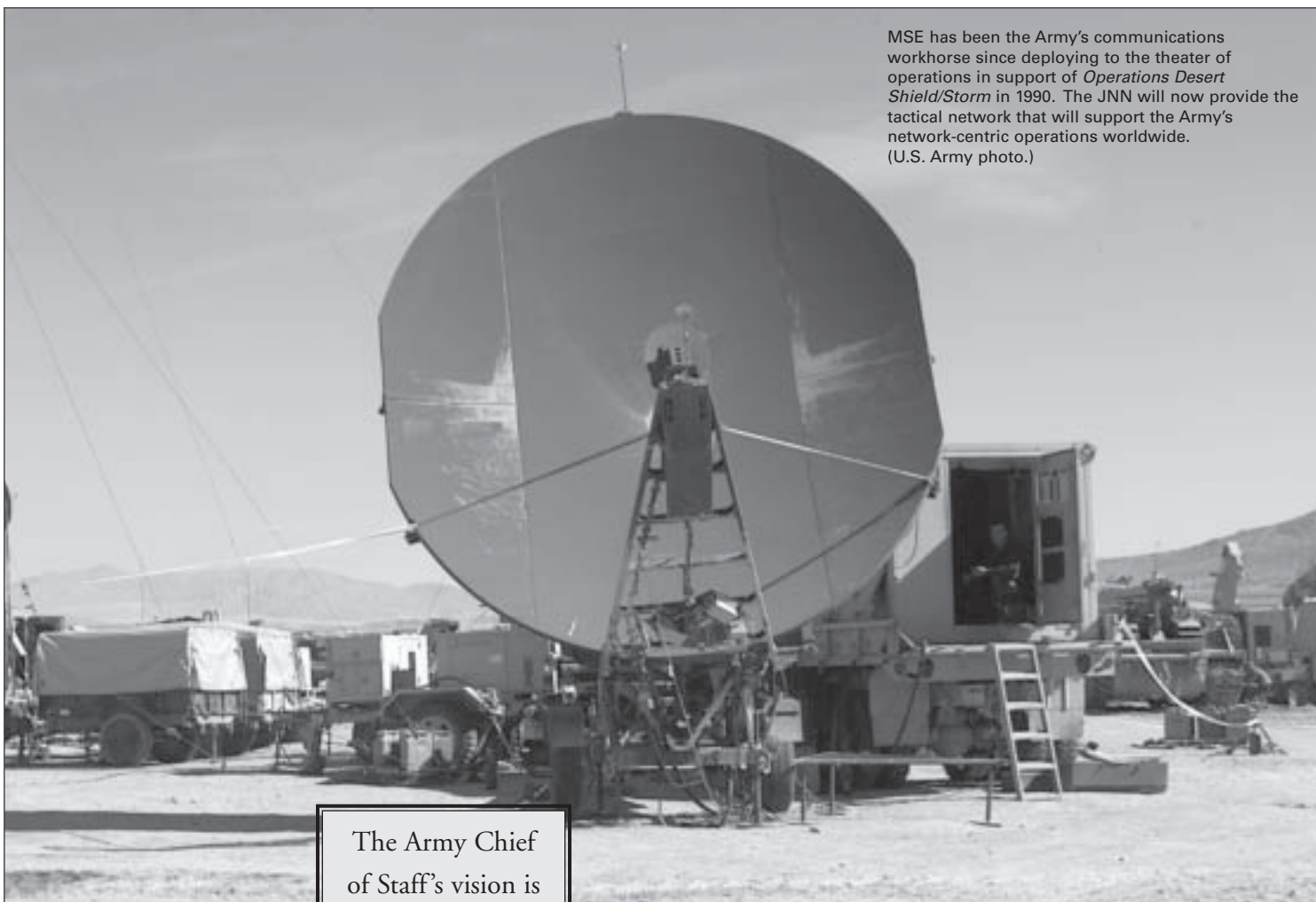
Internet," was coined, it is plain to see that much has changed between then and now in terms of communications and networks.

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MSE has been the Army's communications workhorse since deploying to the theater of operations in support of *Operations Desert Shield/Storm* in 1990. The JNN will now provide the tactical network that will support the Army's network-centric operations worldwide. (U.S. Army photo.)



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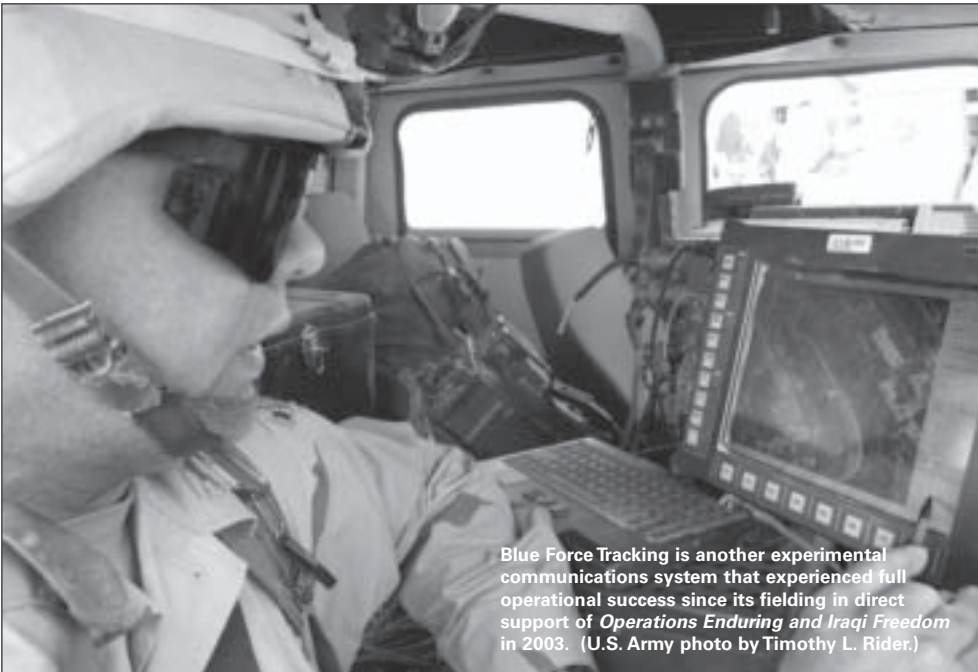
Armored Division later redesignated as the 4th Infantry Division (4ID) — and through Division Capstone Exercises I and II, the Army gained experience and refined its “digital” tactics. Leap forward to 2003 and *OIF* and some of these experimental systems became fully realized operational successes as demonstrated by automated battle command systems nurtured in the 4ID, including Blue Force Tracking, the Advanced Field Artillery Tactical Data System (AFATDS), the Global Command and Control System-Army and Battle Command on the Move.

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### **Tethering Together a Team Effort**

The foundation for 3ID's network capability was laid in the product and manner of production. Just compare the following timelines:

- MSE development began when operational requirements were approved in 1979.
- The MSE acquisition plan was approved in 1983.
- In 1988, the first Army unit was equipped.
- JNN development began in fall 2003 without operational requirements documents. However, an operational need was identified by the Combined Arms Center, Fort Leavenworth, KS, based on *OIF* lessons learned.
- Production began during spring 2004.



Blue Force Tracking is another experimental communications system that experienced full operational success since its fielding in direct support of *Operations Enduring and Iraqi Freedom* in 2003. (U.S. Army photo by Timothy L. Rider.)

- Ten JNNs were delivered to the 3ID between Aug. 9 and Sept. 19.

JNN moved forward quickly because of high demand by Army leadership to support modularity. This type of accelerated responsiveness must remain the norm to keep pace with the exponentially increasing pace of technological growth.

Such are the realities that accompany the "Internet Revolution," which is making a major impact at Fort Monmouth, NJ, the Army's center of gravity for the life-cycle management of command and control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) capabilities. Monmouth is home to "Team C4ISR," which includes the U.S. Army Communications-Electronics Command (CECOM); Program Executive Office (PEO) Command, Control and

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Communications-Tactical (C3T); PEO Intelligence, Electronic Warfare and Sensors; and Program Management Offices for PEO Enterprise Information Systems (EIS) and Communications-Electronics Research, Development and Engineering Center (CERDEC).

The JNN effort is led by one Project Manager (PM) from Team C4ISR — PEO C3T's PM for Tactical Radio Communications Systems (TRCS). PM TRCS, in turn, has relied heavily on other members of Team C4ISR to meet

JNN's tight deadline and continues to rely on that team effort as the JNN network is improved. For example, CERDEC, which developed the Network Operations Center-Vehicle-V, and PM Warfighter Information Network-Tactical, which developed the Brigade Baseband Node, have created

concepts and found available commercial technologies that were invaluable to PM TRCS in designing JNN. CECOM's Logistics and Readiness Center added value by selecting existing environmental control units and generators for JNN. CECOM's Software Engineering Center provided configuration management support, developed strategies for network management during deployment and provided software loading support. PEO C3T's Special Projects Office (SPO) continues to develop and refine the network architecture. In turn, the SPO relies on support from engineers in the CERDEC. PEO C3T's Central Technical Support Facility at Fort Hood, TX, tested and made corrections to the 3ID/JNN architecture and its interoperability with Army Battle Command System (ABCS) Version 6.3 Delta in an environment that simulates field operations. They also drew support from personnel across Team C4ISR. Simply stated, providing JNN to 3ID by Oct. 1st was truly a Team C4ISR "all-hands" effort.



AFATDS, depicted here on a ruggedized Tadpole personal computer will provide maneuver forces with critical real-time information and enable dynamic network-centric operational capabilities. (Photo by Dave Kirk.)

JNN is a representative example, but it's just one of many Team C4ISR teamwork examples that has provided new or improved C4ISR capabilities enabling 3ID's modular deployment. Other significant efforts include a PEO EIS-led project to provide network support using the Combat Service Support Very Small Aperture Terminal, which provides network transport capability to support sense-and-respond logistics. CERDEC is providing a highly mobile satellite-based system — Trojan Special Purpose Intelligence Remote Integrated Terminal (SPIRIT) — to support the secure transmission of sensitive intelligence materials gathered by intelligence units and Joint surveillance capabilities. Trojan SPIRIT provides communications transport capability support for new systems, such as Prophet, and for existing systems that previously had been only corps and division assets but are now part of the Units of Action (UAs) core. PEO C3T is also involved in an effort to provide the ABCS's 11 component systems to the entire Army within a decade so that Units of Employment and UAs will have a single software baseline for all battlefield operating systems. As the Team C4ISR efforts move forward, it will continually "spiral in" improvements while managing the transition to future efforts.

Coordinating the 3ID effort is LTC Vincent

Amos, the 3ID C4ISR "trail boss." Although Amos works for PM TRCS, he is 3ID's "go-to" person for scheduling all Team C4ISR equipment deliveries, even as the division conducts a highly condensed training schedule. Amos is a problem solver and

coordinator backed by Team C4ISR's engineers, developers, acquisition specialists and sustainers. Over a 5 ½-month period that ended Sept. 15, the 3ID trail boss had successfully fielded 3,814 individual equipment items and trained 2,682 soldiers. The trail boss efforts culminated in an in-process review (IPR) on Sept. 15, which included representatives from all of Team C4ISR, as well as representatives from Army Test and Evaluation Command, U.S. Army Forces Command G-6, U.S. Army G-6 and the 3ID. The IPR provided an open forum for representatives from throughout the life cycle to engage. It was also an excellent opportunity to focus everyone on a key mission and share information and lessons learned about modularity for follow-on efforts.

### Managing It All From a Life-Cycle Perspective

Any changes anywhere on the network might impact something else unexpectedly. To Team C4ISR, it means

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we could not field a viable, operational network, one that incorporates automated battle command and ISR capabilities, and provide training and field support, without maximum collaboration. Team C4ISR realized this long ago as its organizations began the effort to build materiel support to network-centric operations. Meeting the challenge of modularity was made possible with the

high level of expertise that has grown in our organizations, and that value can only be unlocked in a truly collaborative "Team C4ISR" environment. The emerging concept of life-cycle management reinforces this team concept by providing senior leaders the

flexibility to assign expertise to high-priority efforts. Organizations under the life-cycle management construct, even though it is yet in its conceptual stage, are demonstrating that they can now collaborate where they once competed, yet still retain a competitive drive to excel in supporting our warfighters.

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